pronounced in cells of neural origin, but not strictly confined to any certain subset of cells. The foetal expression patterns may reflect the types of tumours preferably expressing the N-myc gene during post-natal life.

POTENTIAL MARKERS OF CELLULAR DIFFERENTIATION AND NEOPLASIA IN THE URINARY BLADDER

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Using the rat bladder-MNU carcinogenesis model, attempts are being made to establish a relationship between changes in selected properties of bladder urothelium and stroma and their biologic behaviour placing particular emphasis on changes during neoplastic transformation in luminal plasma membrane, intermediate filament (viz. cytokeratin), and extracellular matrix properties. Extra criteria for defining structure-function correlations in normal and abnormal differentiation involve: (a) histopathological and ultrastructural markers; and (b) probes targetting selected cell surface antigens and glycoconjugates, keratin proteins and extracellular matrix components.

The results, based on luminal surface and vertical tissue section analysis document a broad spectrum of changes in the course of differentiation, hyperplasia and neoplasia. Mapping studies of overt neoplastic change suggest associated 'field changes' of apparently uninvolved bladder mucosa. The data is interpreted within a conceptual model of stromal-epithelial regulatory/deregulatory processes in bladder.

KARYOTYPIC CHANGES IN HUMAN MALIGNANT MELANOMA

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Chromosome studies of the six melanoma patients were performed on direct preparations from primary and/or metastatic tumour explants. Abnormalities in ploidy demonstrated by the addition or loss of normal chromosomes and other structure rearrangements were noted in all cases. In one of the primary lesions 30% cells showed in direct karyotype analysis evidence of gene amplification in form of homogeneously staining region (HSR) on chromosome 6 at band q16 as well as two other characteristic chromosomes (7p14+ and 14q32+) among numerous defined and undefined markers. No double-minute bodies (DMs) were observed in primary tumour specimens. Cells from primary cultures, cell lines and cell strains from both primary lesion and metastatic node shared the same alterations, suggesting their origin from a common precursor.

HETEROTRANSPLANTATION OF HUMAN ENDOMETRIAL TUMOURS TO NUDE MICE

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Established tumour lines of human endometrial tumours are few, because of low take rate and tumour heterogeneity. Thirteen specimens of human endometrial tumours were transplanted. Twelve were biopsy samples of varying histology obtained at curettage, one was a metastasis, obtained from paraaortic lymph nodes at laparotomy.

Serial transplantation was successful in five cases and two tumours grew 2 respectively for 1 passage.

Thymidine incorporation into DNA in the successfully transplanted tumours was increased during the first passages. The take rate was 100% in the fifth and subsequent passages. Twelve original tumours had detectable cytosol estrogen receptor and eight had detectable progesterone receptor content.

The success of heterotransplantation seems to be based initially upon the tumour subtype and progesterone receptor content.

AMPLIFICATION OF myc-FAMILY GENES IN SMALL CELL LUNG CANCER (SCLC) CELL LINES

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We studied 18 SCLC cell lines established in Groningen. Myc-family gene amplification was found in 11 cell lines: 7x c-myc, 2x N-myc, 2x L-myc. Out of 8 cell lines with a myc amplification, 7 appeared to contain numerous DMs. In situ hybridization was carried out to find the location of the amplification. In 3 cell lines we found amplified c-myc on DMs, in